

Application No. 10/573,301
Reply to Office Action of March 30, 2009

6

Docket No.: 65140(70551)

REMARKS

In the Office Action dated March 30, 2009, claims 1-13 are pending, claims 6-13 are withdrawn from consideration and claims 1-5 are rejected. Reconsideration is requested for at least the reasons discussed hereinbelow.

Claims 1-5 are rejected under 35 U.S.C. §103(a) over Lee et al. (US 2003/0147039; "Lee") in view of Shin et al. (US 6,793,987; "Shin") and Yawata et al. (US 6,922,229; "Yawata"). The Examiner admits that Lee "does not disclose that the method further includes prior to the sealant arranging step, a deaerating step of arranging in a pressure-reduced atmosphere at least a substrate on which the sealant is to be arranged out of the two substrates; and to be performed before the bonding step, a releasing step of releasing the pressure-reduced atmosphere by an inert gas prior to the sealant arranging step."

Shin and Yawata are cited to make up for the deficiencies of Lee. The Examiner alleges that Shin "discloses a process performed prior to a sealant arranging step, a deaerating step of arranging in a pressure-reduced atmosphere at least a substrate on which the sealant is to be arranged out of the two substances (col. 8, line 6)." The Examiner further alleges that Yawata "discloses a method comprising a releasing step of releasing a pressure-reduced atmosphere by inert gas (col. 5, lines 8-11).

Applicant strongly disagrees that Shin and Yawata make up for the deficiencies of Lee. Shin discloses photoalignment materials for use in making LCDs. At column 8, lines 120, Shin discloses dissolving a solid photoalignment polyamide to prepare a solution that is coated on a glass substrate and dried in a vacuum oven. There is no teaching or suggestion whatsoever in Shin for a method that includes "prior to the sealant arranging step, a deaerating step of arranging in a pressure-reduced atmosphere at least a substrate on which the sealant is to be arranged out of the two substrates; and to be performed before the bonding step, a releasing step of releasing the pressure-reduced atmosphere by an inert gas prior to the sealant arranging step," as set forth in claim 1.

Shin merely discloses drying the photoalignment polymer solution on a glass substrate in

Application No. 10/573,301
Reply to Office Action of March 30, 2009

7

Docket No.: 65140(70551)

a vacuum oven. There is not a hint of a suggestion in Shin to release pressure-reduced atmosphere in the vacuum dryer by an inert gas prior.

The Examiner contends that it would have been obvious to employ a releasing step of releasing a pressure-reduced atmosphere by inert gas because one would be motivated to prevent contamination. However, it is not seen why one of ordinary skill in the art would have been motivated to release the pressure-reduced atmosphere in a vacuum drying oven by inert gas. There is no suggestion of contamination in Shin, or the need to avoid contamination when releasing the pressure-reduced atmosphere in the vacuum drying oven. Thus, it is not seen how the presently claimed invention would have been obvious to one of ordinary skill in the art in view of any combination of Lee and Shin.

Yawata fails to make up for the deficiencies of Lee and Shin. At column 5, lines 8-11, Yawata discloses a gas purge valve connected to a pressure source such as Nitrogen gas or clean dry air that is use to restore pressure in a vacuum chamber. Yawata describes a process for making a LCD at column 6, line 61 through column 10, line 24 with reference to figures 3 to 6. It is readily seen that Yawata discloses providing a sealing agent on one of the LCD substrates, then reducing pressure, bonding the two substrates together, and finally releasing the pressure-reduced atmosphere. After the bonding step, a small amount of air is introduced into the vacuum chamber (col. 8, line 62 et seq.). Subsequently, the inside of the vacuum chamber is purged and its internal pressure restored to atmospheric pressure by introducing nitrogen or clean dry air (col. 9, lines 47-51). Thus, there is no suggestion in Yawata to perform a releasing step prior to the bonding step by releasing the pressure-reduced atmosphere by an inert gas, as set forth in claim 1. Indeed, there is no suggestion to avoid contamination by air because Yawata first introduces a small amount of air, even if nitrogen is used for the final gas to restore atmospheric pressure in the vacuum chamber.

Thus, none of the cited references, Lee, Shin or Yawata, teach or suggest a method for making a LCD panel, further including:

to be performed prior to said sealant arranging step, a
deaerating step of arranging in a pressure-reduced atmosphere at

Application No. 10/573,301
Reply to Office Action of March 30, 2009

8

Docket No.: 65140(70551)

least a substrate on which said sealant is to be arranged out of said
two substrates; and

to be performed prior to said bonding step, a releasing step
of releasing said pressure-reduced atmosphere by an inert gas.

Emphasis added.

Regarding claim 2, none of the cited references, nor their combination teach or suggest
that the "releasing step is performed prior to said sealant arranging step," as claimed herein.

Regarding claim 3, Lee discloses coating the sealant before applying vacuum (FIG. 2).
However, there is no suggestion in Lee to apply a vacuum, release the vacuum with inert gas
and, then, arrange the sealant, as claimed herein.

Claims 4 and 5 are patentable for at least the same reasons as discussed herein.

New claim 14 is patentable for at least the reasons discussed above.

Thus, it is not seen how the presently claimed invention would have been obvious to one
of ordinary skill in the art in view of any combination of Lee, Shin and Yawata.

In view of the above, discussion, Applicant requests that claims 6- 10 be rejoined with
claim 1 in accord with the restriction requirement.

If for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess
fee paid, the Commissioner is hereby authorized and requested to charge Deposit Account No.
04-1105.

Application No. 10/573,301
Reply to Office Action of March 30, 2009

9

Docket No.: 65140(70551)

In view of the discussion above, Applicant respectfully submits that the pending application is in condition for allowance. An early reconsideration and notice of allowance are earnestly solicited.

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Respectfully submitted,

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